Supplementary data file S-4: MicroRNAs that have been implicated in SLE.

miRNA	Regulates:	Expression in SLE; hypothesis of action:	Ref.
miR-112		Downregulated	[1]
miR-1224-3p	GPDH, PMVK, BSG	Downregulated	[2]
miR-1224-3P		Downregulated	[2]
miR-125a	KLF13	Downregulated. Indirectly regulates RANTES via KLF13 (inflammation)	[3]
miR-126		Upregulated. Regulates DNA methylation by reduction in DMNT1 levels.	[4]
miR-141		Downregulated	[1]
miR-142-3p		Upregulated	[1]
miR-146a		Downregulated. Assayed in PBMCs.	[5]
miR-146a		Serum levels downregulated. Urinary levels upregulated.	[6]
miR-146a	IRF-5, STAT-1, IRAK1, TRAF6	Downregulated. Directly represses transactivation of IFNG1; suppress inflammatory cytokine production.	[7]
miR-146a		Promoter mutation of miRNA molecule results in reduced binding of Ets1 and reduced expression of miR-146a, with concomitant increase in IFN1 activation	[8]
miR-148a	DNMT1, DNMT3B	Upregulated. Directly down regulates DNMT1 leading to hypomethylation (epigenetic effect)	[9]
miR-155		Upregulated in regulatory T cells	[10]
miR-155		Serum levels downregulated.	[6]
miR-17-5p		Downregulated	[1]
miR-181		Downregulated. Is an important modulator of B and T cell differentiation, maturation and function – downregulated in paediatric SLE	[11]
miR-184		Downregulated	[1]
miR-189		Upregulated	[1]
miR-196a		Downregulated	[1]
miR-198		Upregulated	[1]
miR-21	RASGRP1	Upregulated. Indirectly downregulates DNMT1 expression via RASGRP1, causing hypomethylation (epigenetic effect)	[9]
miR-21	PDCD4	Upregulated. Decreases expression of PDCD4, a selective protein translation inhibitor that affects T cell response.	[12]
miR-21		Upregulated	[1]
miR-298		Upregulated	[1]
miR-299-3p		Upregulated	[1]

miR-342		Upregulated	[1]
miR-371-5p	IL-32, IFIT3, IFIT2, FGR, IRF5, CD40, PTTG1	Upregulated	[2]
miR-383		Downregulated	[1]
miR-409-3p		Downregulated	[1]
miR-423-5p	SLC2A4, VGF, SOX12	Upregulated	[2]
miR-61		Upregulated	[1]
miR-638	CD79B, LY6E, ZNF330	Upregulated.	[2]
miR-663	IL-32, IFI35, CENTA1, LY6E, ZNF330	Upregulated.	[13]
miR-663		Upregulated	[2]
miR-78		Upregulated	[1]

References:

- 1. Dai Y, Huang YS, Tang M, et al. Microarray analysis of microRNA expression in peripheral blood cells of systemic lupus erythematosus patients. Lupus 2007;16(12):939-46.
- 2. Te JL, Dozmorov IM, Guthridge JM, et al. Identification of unique microRNA signature associated with lupus nephritis. PLoS One 2010;5(5):e10344.
- 3. Zhao X, Tang Y, Qu B, et al. MicroRNA-125a contributes to elevated inflammatory chemokine RANTES levels via targeting KLF13 in systemic lupus erythematosus. Arthritis Rheum 2010;62(11):3425-35.
- 4. Zhao S, Wang Y, Liang Y, et al. MicroRNA-126 regulates DNA methylation in CD4+ T cells and contributes to systemic lupus erythematosus by targeting DNA methyltransferase 1. Arthritis Rheum 2011;63(5):1376-86.
- 5. Hai-yan W, Yang L, Mei-hong C, Hui Z. Expression of MicroRNA-146a in peripheral blood mononuclear cells in patients with systemic lupus Erythematosus. Zhongguo Yi Xue Ke Xue Yuan Xue Bao 2011;33(2):185-8.
- 6. Wang G, Tam LS, Li EK, et al. Serum and urinary cell-free MiR-146a and MiR-155 in patients with systemic lupus erythematosus. J Rheumatol 2010;37(12):2516-22.
- 7. Tang Y, Luo X, Cui H, et al. MicroRNA-146A contributes to abnormal activation of the type I interferon pathway in human lupus by targeting the key signaling proteins. Arthritis Rheum 2009;60(4):1065-75.
- 8. Luo X, Yang W, Ye DQ, et al. A Functional Variant in MicroRNA-146a Promoter Modulates Its Expression and Confers Disease Risk for Systemic Lupus Erythematosus. PLoS Genet 2011;7(6):e1002128.
- 9. Pan W, Zhu S, Yuan M, et al. MicroRNA-21 and microRNA-148a contribute to DNA hypomethylation in lupus CD4+ T cells by directly and indirectly targeting DNA methyltransferase 1. J Immunol 2010;184(12):6773-81.
- 10. Divekar AA, Dubey S, Gangalum PR, Singh RR. Dicer insufficiency and microRNA-155 overexpression in lupus regulatory T cells: an apparent paradox in the setting of an inflammatory milieu. J Immunol 2011;186(2):924-30.
- 11. Lashine YA, Seoudi AM, Salah S, Abdelaziz AI. Expression signature of microRNA-181-a reveals its crucial role in the pathogenesis of paediatric systemic lupus erythematosus. Clin Exp Rheumatol 2011;29(2):351-7.

- 12. Stagakis E, Bertsias G, Verginis P, et al. Identification of novel microRNA signatures linked to human lupus disease activity and pathogenesis: miR-21 regulates aberrant T cell responses through regulation of PDCD4 expression. Ann Rheum Dis 2011.
- 13. Dai Y, Sui W, Lan H, Yan Q, Huang H, Huang Y. Comprehensive analysis of microRNA expression patterns in renal biopsies of lupus nephritis patients. Rheumatol Int 2009;29(7):749-54.